

REMARKS

Claim Rejections

Claims 1 and 2 are rejected under 35 U.S.C. § 102(a) as being anticipated by Xu (WO-02/19459). Claims 1, 2 and 5-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu (WO-02/19459) in view of Nguyen (US-6,424,074). Claims 3-7 are rejected under 35 U.S.C. § 112, second paragraph. Claims 12-14 are allowed.

Drawings

Applicant proposes to amend Figures 1, 2, 3(a), 3(b) and 6. In Figure 1 it is proposed to add the label "Prior Art". In Figure 2 it is proposed to change the section reference "A" to "I". In Figures 3(a) and 3(b) it is proposed to change the reference numbers to be consistent with those of Figure 2. In Figure 6 it is proposed to remove the reference numbers "63" and "64", which were not identified in the specification. No "new matter" has been added to the original disclosure by the proposed amendments to these figures. Approval of the proposed drawing changes is respectfully requested.

Amendments to Specification

Applicant has amended the specification to provide antecedent basis for the actuating methods for driving the micro-electro-mechanical switch, which is set forth in original claim 2. No "new matter" has been added to the original disclosure by the foregoing amendments to the specification.

New Claims

By this Amendment, Applicant has canceled claims 1-11 and has added new claims 15-24 to this application. It is believed that the new claims specifically set forth each element of Applicant's invention in sufficient compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art, taken individually or in combination.

The new claims recite a bulk acoustic wave filter controlled by micro-electro-mechanical switches comprising: a) a substrate (20); at least one wave filtering device (22) connected to the substrate (20), the wave filtering device (22) having an input terminal (21) and an output terminal (23), the input terminal and the output terminal being at opposite ends of the wave filtering device; and at least one micro-electro-mechanical switch (25) releasably engaging the wave filtering device, such that the bulk acoustic wave filter is switched off when the at least one micro-electro-mechanical switch is in contact with the wave filtering device and switched on when the at least one micro-electro-mechanical switch is separated from the wave filtering device, wherein the at least one wave filtering device and the at least one micro-electro-mechanical switch are connected to a first side of the substrate opposite a cavity on a second side of the substrate, the at least one micro-electro-mechanical switch controls the acoustic wave impedance generated by the bulk acoustic wave filter.

In another embodiment of the present invention the at least one micro-electro-mechanical switch is separated from the wave filtering device a distance less than 1 μm when the bulk acoustic wave filter is switched on.

The cited reference to Xu discloses a switchable and tunable coplanar waveguide filter having a filter element (302), a first micro-electro-mechanical system switch (304), a second micro-electro-mechanical system switch (308), a central metal segment (310), a signal input line (306), and a signal output line (312).

Xu does not teach the at least one wave filtering device and the at least one micro-electro-mechanical switch being connected to a first side of the substrate opposite a cavity on a second side of the substrate, as does the present invention. Further, Xu does not teach the mechanical switch being separated from the wave filtering device a distance less than 1 μm when the acoustic wave filter is switched on.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Xu does not disclose each and every feature of Applicant's new claims and, therefore,

could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Xu cannot be said to anticipate any of Applicant's new claims under 35 U.S.C. § 102.

The cited reference to Nguyen discloses a method and apparatus for upconverting and filtering an information signal utilizing a vibrating micromechanical device. The filter consists of two beam resonators with anchors (18) mechanically coupled by a beam (19), conductive strips (20, 22, 24, 26), and an antenna.

Nguyen does not teach the at least one wave filtering device and the at least one micro-electro-mechanical switch being connected to a first side of the substrate opposite a cavity on a second side of the substrate. Further, Nguyen does not teach the at least one micro-electro-mechanical switch being separated from the wave filtering device a distance less than 1 μm when the bulk acoustic wave filter is switched on.

Even if the teachings of Xu and Nguyen were combined, as suggested by the Examiner, the resultant combination does not suggest the at least one wave filtering device and the at least one micro-electro-mechanical switch being connected to a first side of the substrate opposite a cavity on a second side of the substrate, or the at least one micro-electro-mechanical switch being separated from the wave filtering device a distance less than 1 μm when the bulk acoustic wave filter is switched on.

It is a basic principle of the United States Patent Laws that it is improper to arbitrarily pick and choose prior art patents and combine selected portions of the selected patents on the basis of the applicant's disclosure to create a hypothetical or fictional combination which allegedly renders a claim obvious unless there is some direction in the selected prior art patents to combine the selected teachings in a matter to negate the patentability of the claimed subject matter.

The Courts have advocated that even if the prior art may be modified, the modification is not obvious unless the prior art suggests the desirability for the modification. For example, in *In re Fritch*, 922 F.2d 1260, 23 USPQ.2d 1780 (Fed. Cir. 1992), the Court held, at page 1783:

The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

Neither Xu, nor Nguyen disclose, or suggest a modification of the specifically disclosed structure that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Applicant hereby respectfully submits that no combination of the cited prior art renders obvious the new claims 15-24.

Claims 12-14 have been indicated as being allowable.

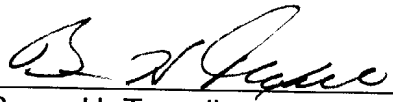
Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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By: _____


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